

REMARKS/ARGUMENTS

In view of the remarks herein, favorable reconsideration and allowance of this application are respectfully requested. Claims 1-10 are pending for further examination.

From the outset, it is noted that there is some confusion regarding the rejections actually appearing in the Final Office Action. The main portion of the Final Office Action indicates that claims 1 and 6-7 have been rejected based on the alleged combination of Bilodeau and Higashiyama. However, the "Response to Arguments" section seems to admit that this alleged combination fails to render obvious such claims, and instead suggests that a rejection based on Bilodeau, Higashiyama, and Matsumoto has been made. To the extent that the Examiner has implicitly agreed that the alleged Bilodeau/Higashiyama combination fails to render obvious the invention of claims 1 and 6-7, Applicant certainly agrees. However, no rejection based on Bilodeau, Higashiyama, and Matsumoto has been made of record. To the extent that such a rejection was, in fact, made in the Final Office Action, Applicant notes that this new ground of rejection was not necessitated by an amendment and, thus, the last Office Action improperly was made "final." In view of this apparent mistake, Applicant expects that the "finality" of the rejection be withdrawn, and that either a new non-final Office Action will be issued with the grounds of rejection clearly indicated, or that this case will be passed to allowance.

In any case, to facilitate prosecution on the merits, the allegations regarding an alleged three-way combination of Bilodeau, Higashiyama, and Matsumoto will now be addressed. In the paragraph bridging pages 6-7, the Final Office Action alleges that Applicant admitted that Matsumoto teaches the claimed writing step of claim 1, and the similar features of claims 6 and 7. However, Applicant notes that this alleged "admission" is directed solely to Matsumoto and, in any event, Matsumoto's placement of a light source as a viewpoint is not used in the same

manner as that required by claim 1. In particular, Matsumoto does not teach “writing a z-value corresponding to each pixel within a predetermined area including at least the shadow casting object, into a z-buffer, using a light source placed in the virtual space at the viewpoint.”

Even assuming, *arguendo*, that Matsumoto teaches or suggests that a scene is rendered with a light source used as a viewpoint, and even assuming, *arguendo*, that Higashiyama teaches that a shadow volume (shadow polygons) is generated from a plane object, none of the prior art of record teaches that a position of each vertex (a position in a thickness direction) of each of the polygons constituting the plane object is determined from Z values in a Z bugger, which are obtained after the scene has been rendered with the light source used as the view point. As such, any three-way Bilodeau/Higashiyama/Matsumoto combination would not render obvious the invention of claims 1 and 6-7 (or their respective dependents).

With respect to the rejections on the merits included in the main portion of the Final Office Action, Applicant notes that claims 1, 6, and 7 remain rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bilodeau et al. (U.S. Patent No. 6,384,822) in view of Higashiyama (U.S. Patent Publication No. 2002/0036638), and that claims 2-5 and 8-10 remain rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bilodeau in view of Higashiyama, and further in view of Matsumoto (U.S. Patent No. 5,043,922). These rejections are respectfully traversed for at least the following reasons.

The Final Office Action admits that Bilodeau does not teach or suggest using a light source placed in the virtual space as a view point and generating the shadow volume from a plane object by determining a position of each vertex of a plurality of polygons composing the plane object. The Final Office Action further admits that Higashiyama shows that reference V is the light source and V is not the viewpoint. Still further, the Final Office Action agrees with

Applicant's conclusion that the position of the front-facing and rear-facing polygon suggests that the viewpoint is actually where a person reading the published application is located, at least in Fig. 4. However, the Final Office Action rather curiously goes on to suggest that Higashiyama teaches that the viewpoint can be moved around at least in paragraphs 7 and 2. Applicant respectfully disagrees with this assertion. A reading of these two paragraphs is dispositive:

Paragraph 7 states that:

“In view of the above situation, an object of the present invention is to provide image processing method and apparatus for realistically and easily creating a shadow thrown on the outer surface of an object, a readable storage medium storing a 3D image processing program and a video game system.”

Paragraph 2 simply states that:

“In recent years, various game systems in which characters are displayed in a simulated 3D space generated on a monitor screen have been spread. Some of such game systems are known to simulate car race, skiing, surfing, motor-boating, snow boarding, skate boarding, etc.”

Thus, Applicant respectfully submits that these two portions of Higashiyama are extremely generic, and are completely unrelated to a particular viewpoint. Moreover, the cited portions are completely silent regarding the viewpoint and the light source being the same. Accordingly, Applicant respectfully submits that these portions do not suggest that the viewpoint can be moved around such that it is the same as the light source.

Furthermore, Applicant respectfully submits that if the light source and viewpoint were exactly the same, then Higashiyama in combination with Bilodeau would not result in a functioning embodiment. Applicant further submits that it would not be possible, or even make sense, to subtract the back-facing polygon from the front-facing polygon in the manner suggested in the Higashiyama reference if, in fact, the light source and the viewpoint were exactly the same. Although the test for obviousness is not whether the teachings of one reference can be

bodily incorporated into another reference, there still must be some reasonable expectation of success and, in any event, the resulting combination must be enabled. Applicant respectfully submits that the alleged combination is deficient in all of these respects.

In connection with claims 7-10 and with respect to Applicant's argument that Matsumoto fails to teach a reduced amount of exception case handling, the Final Office Action alleges that such limitations are intended use recitations that do not result in a structural difference between the claimed invention and the prior art. However, Applicant questions whether this really is the case. Indeed, the reduction in exception case handling is functional, at least in that it describes the functioning of the claimed method/computer-readable storage medium/system/etc. Additionally, it is structural in the sense that it describes the algorithm that is performed by the method and/or stored on the computer readable storage medium, etc. Thus, such recitations do not appear to be intended use limitations.

The Final Office Action further notes that because the claims and specification fail to discuss a standard regarding how much of a reduction is required, the corresponding limitation is given no patentable weight. Again, Applicant submits that this reasoning is incorrect. That is, Applicant submits that it would be readily apparent to one of ordinary skill in the art that the reduction in exception case handling is provided relative to conventional techniques, such as those described by Bilodeau, Higashiyama, and Matsumoto, and thus the alleged three-way combination thereof. Such certainly is the situation described in the specification. Furthermore, the failure to properly consider this limitation is yet further reason to withdraw the finality of rejections, and either to issue a new, non-final Office Action or to pass this case to allowance.

In any event, at the bottom of page 7, the Final Office Action properly notes that the claims do not require "eliminating," and instead observes that they require "reducing" the

amount of exception case handling. Applicant continues to believe that the cited prior art references, alone and in combination, fail to teach or suggest this feature.

Finally, on page 8 of the Final Office Action, the Final Office Action makes certain remarks directed to the arguments on page 5 of Applicant's previous Response. The Final Office Action merely states that Applicant's arguments are directed toward Higashiyama individually, and not against the alleged combination of references. Applicant notes, however, that the arguments would apply both to the references individually, as well as the combination of references, since the Final Office Action merely attempts to incorporate certain features of Higashiyama into Bilodeau in making the alleged combination. Thus, Applicant's arguments are entirely proper and, in any event, apply equally to the alleged combination.

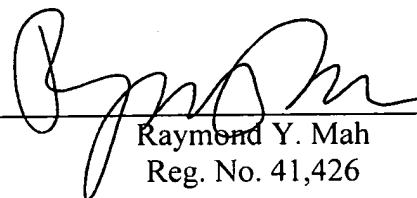
For at least the reasons provided above, reconsideration and withdrawal of all outstanding rejections are respectfully requested.

In view of the foregoing remarks, withdrawal of the rejections and allowance of this application are earnestly solicited. Should the Examiner have any questions regarding this application, or deem that any formalities need to be addressed prior to allowance, the Examiner is invited to call the undersigned attorney at the phone number below.

Respectfully submitted,

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